March 16, 1954 S. SEGAL ET AL 2,672,386

VERTICALLY ADJUSTABLE POSTING STAND

Filed June 19, 1952 3 Sheets-Sheet 1

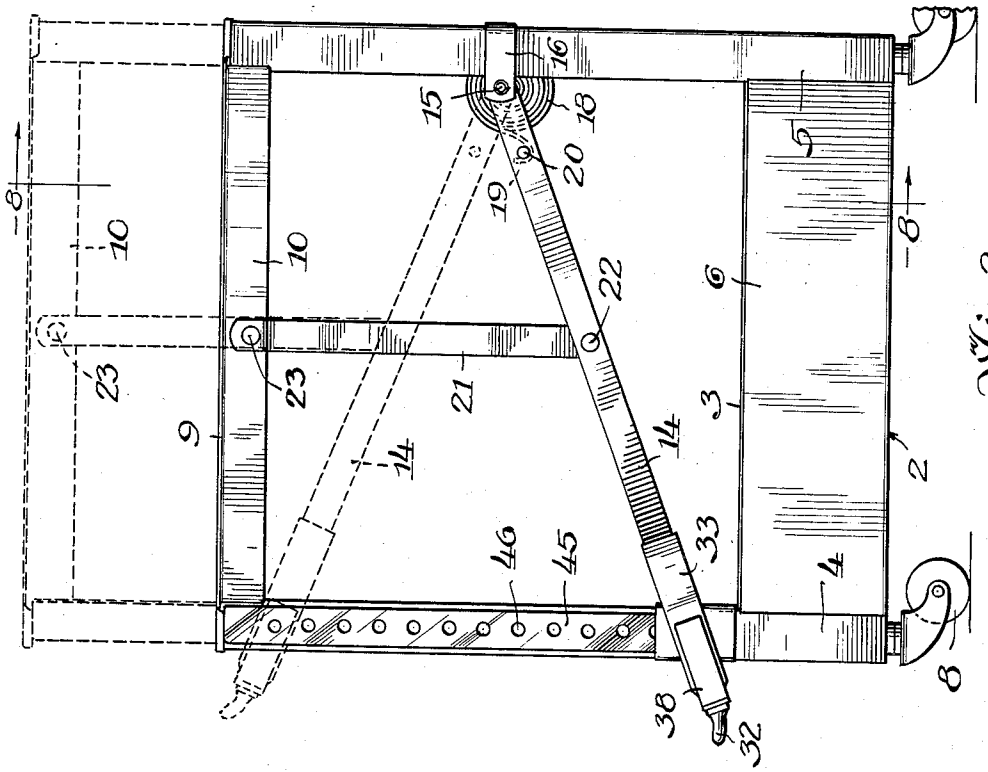


Fig. 2

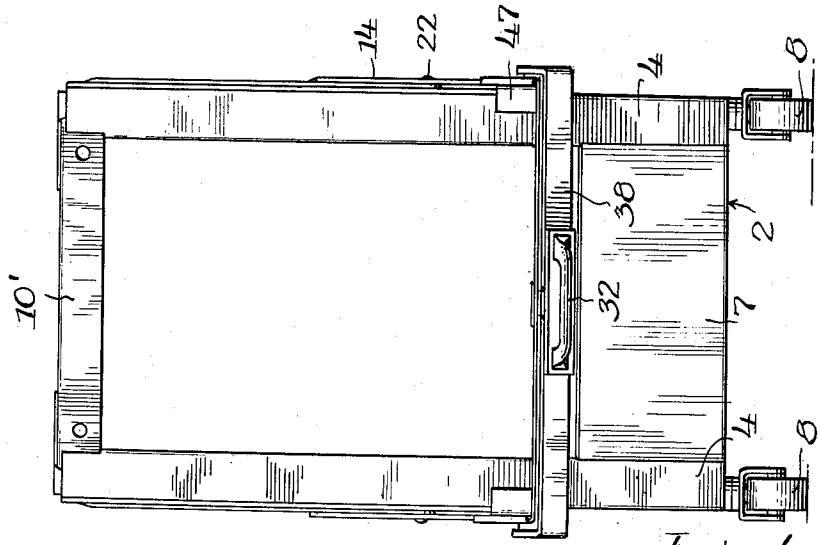


Fig. 1

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March 16, 1954 S. SEGAL ET AL 2,672,386

VERTICALLY ADJUSTABLE POSTING STAND

Filed June 19, 1952 3 Sheets-Sheet 2

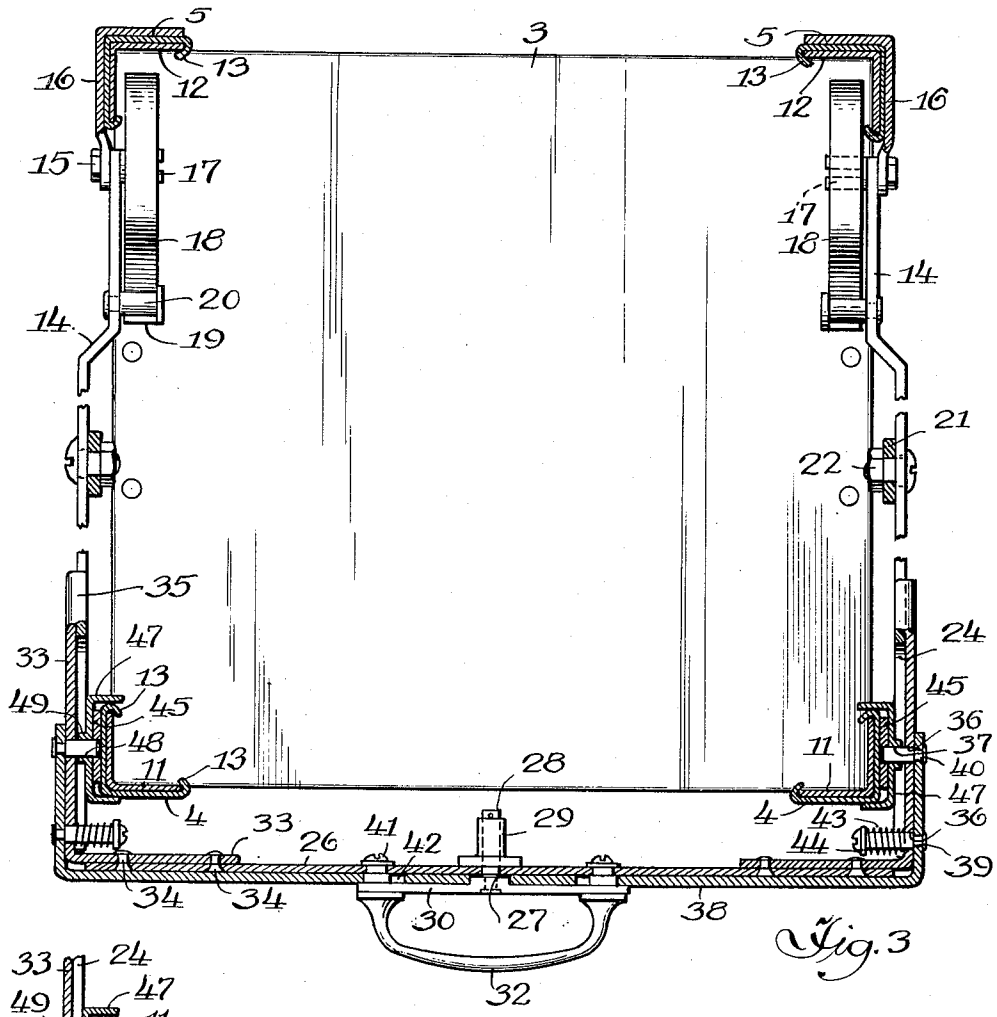


Fig. 3

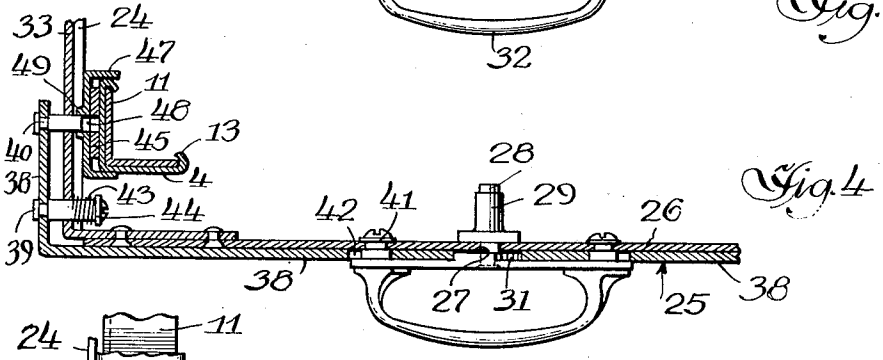


Fig. 4

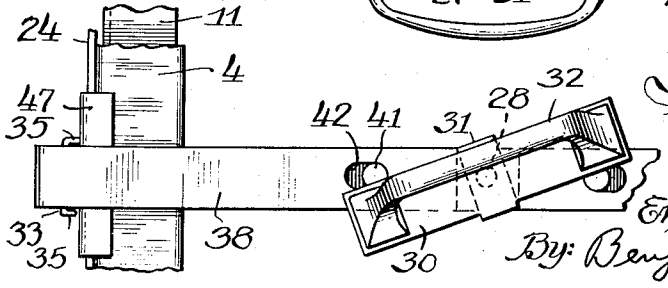


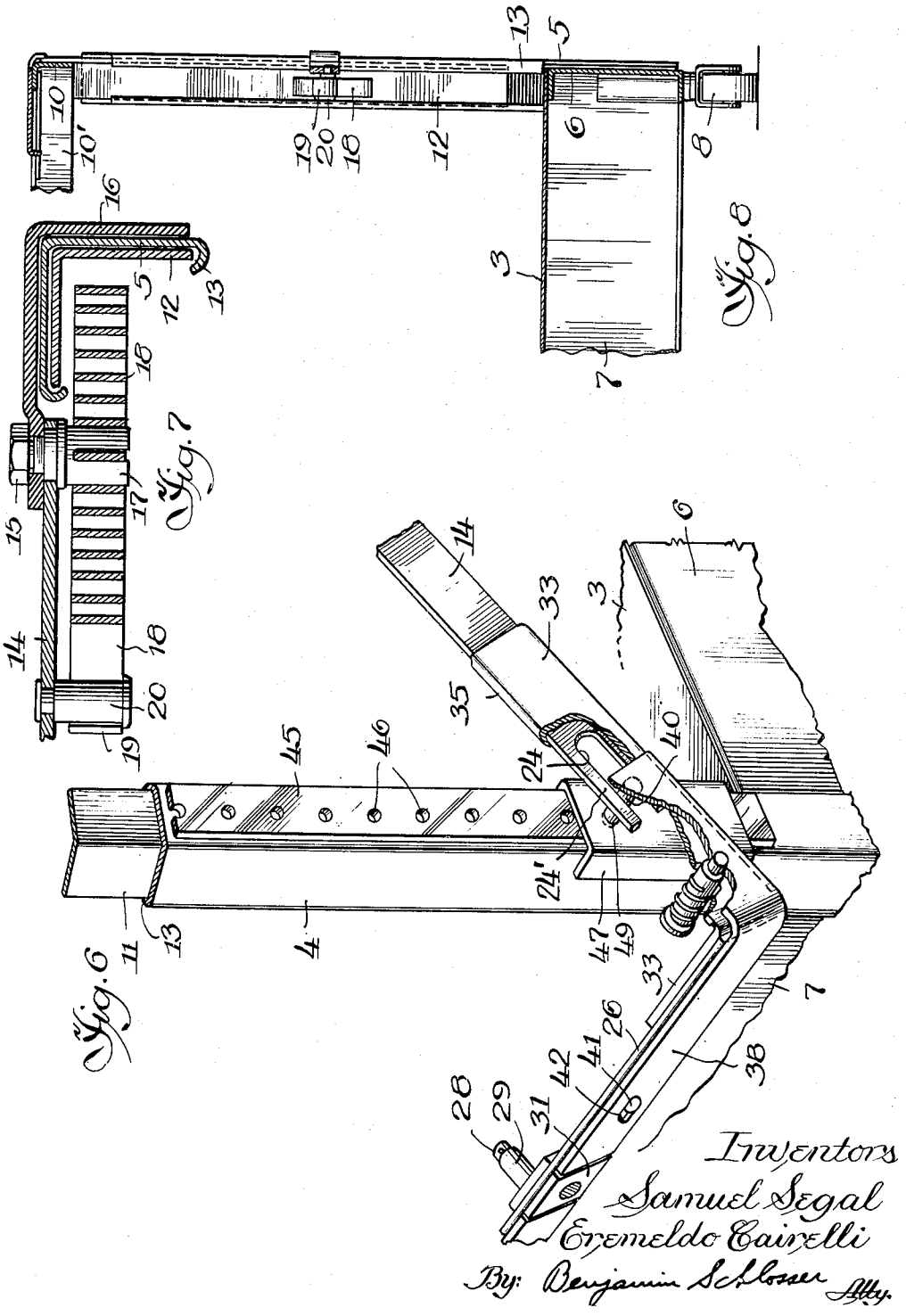
Fig. 5

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March 16, 1954 S. SEGAL ET AL 2,672,386

VERTICALLY ADJUSTABLE POSTING STAND

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UNITED STATES PATENT OFFICE

2,672,386

VERTICALLY ADJUSTABLE POSTING STAND

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5 Claims. (Cl. 311—39)

1

This invention relates to a vertically adjustable posting stand, and is particularly concerned with means for facilitating the vertical movement of a supporting platform relative to the base on which it is mounted and for securely holding the platform in any of a plurality of predetermined positions.

Although a stand of this type may be susceptible of many diversified uses, the present stand is designed particularly for use in supporting a posting tray at a height convenient to the operator, whether in sitting or standing position, so as to enhance the efficiency of the operator by reducing the physical strain of posting operations.

The stand of the present invention comprises a base and a supporting platform mounted on the base and vertically adjustable relative thereto.

It is an object of the invention to provide simple, efficient means for securely holding the supporting platform at any height to which it has been adjusted. A further object is to provide means for quickly and easily releasing the holding means and moving the platform to a different level. Another object is to provide spring means to counterbalance the weight of the platform and the posting tray supported thereon to reduce the amount of force required to lift the loaded platform and to prevent the loaded platform from slamming down to its lowermost position whenever the holding means is released.

Other objects and advantages of the invention will become apparent upon reading the following description, taken in conjunction with the accompanying drawings, showing a preferred illustrative embodiment of the invention, in which:

Figure 1 is a front elevational view of a stand embodying the invention;

Figure 2 is a side elevational view of the stand, showing the supporting platform in raised position in dotted lines;

Figure 3 is a transverse sectional view showing the holding means in latched position;

Figure 4 is a fragmentary transverse sectional view showing the holding means in unlatched position;

Figure 5 is a fragmentary front elevational view of the structure shown in Figure 4 in the unlatched position;

Figure 6 is a fragmentary perspective view of one front corner of the stand, with portions of the operating lever broken away to facilitate illustration of the structure;

2

Figure 7 is a fragmentary cross sectional view of one rear corner showing the spring; and

Figure 8 is a cross sectional view, taken along the line 8—8 of Figure 2.

In the drawings, the reference numeral 2 indicates a base comprising a flat plate 3, a pair of angular posts 4 extending upwardly at each front corner, a pair of similar posts 5 at each rear corner, side panels 6 extending downwardly from plate 3, and end panels 7 at the front and rear ends of the stand similar to the side panels. The stand is preferably provided with a caster 8 at each corner. Sufficient space is provided between the corner posts to allow a filing or storage tray to be supported on the flat plate 3.

The supporting platform, upon which a posting tray is positioned, comprises a flat plate 9 having short depending side flanges 10, end flanges 10', and having two front posts 11 and two rear posts 12. Each post 11 and 12 is angular and fits against the inner surface of one of the posts 4 or 5. The outer edges of posts 4 and 5 are bent inwardly, as indicated at 13, to embrace the edges of the posts 11 and 12 with a sliding fit.

The mechanism for moving the supporting platform vertically comprises a pair of levers 14 each pivotally connected at its rear end to a stud 15 carried by a strap 16. Each of the straps 16 is rigidly secured to one of the posts 5 at opposite sides of the tray about half way between the top of the post and the flat plate 3. The stud 15 has a bifurcated portion 17 projecting inwardly past the lever 14. A spiral spring 18 has its inner end fixed in the bifurcated projecting portion 17 of stud 15 and its outer end terminates in a curved lip 19 which fits around a stud 20 fixed to the lever 14. A link 21 extending parallel to the posts 4 and 5 about half way between them at each side of the stand is pivotally connected at one end to the lever 14 and at its other end to the side flange 10, as indicated at 22 and 23, respectively. The springs 18 exert force tending to lift the levers 14 about their pivots 15. The levers 14 act through links 21 to lift the supporting platform. The springs 18 are so designed that the total force exerted by them is slightly less than the weight of the supporting platform and the weight of the posting tray carried by the platform. Accordingly only a small force has to be applied to the levers 14 to lift the platform and posting tray.

Each lever 14 is slotted at its forward end, as indicated at 24, to form bifurcations 24'. The forward ends of both levers 14 are connected by a cross bar 25 extending transversely at the front

edge of the stand. The cross bar 25 comprises a flat strip 26, apertured, as indicated at 27, to receive a stud 28. A flanged sleeve 29 is positioned adjacent the aperture 27 and furnishes a bearing for the stud 28 which projects therethrough. The head portion of stud 28, which is on the other side of strip 26, has a flat plate 30 secured to it. The plate 30 has a block 31 welded to its surface adjacent strip 26 and has a handle 32 rigidly secured to its opposite surface adjacent its ends. When the handle 32 is gripped it may be rotated to a predetermined extent and will rotate the block 31 with it.

Adjacent each end of the strip 26 an angular member 33 is riveted, as indicated at 34. The member 33 extends past the post 4 and engages the outer surface of the lever 14. The end portion of member 33 which extends beyond the bifurcated portion 24 has its top and bottom edges bent inwardly, as indicated at 35, to form lateral flanges engaging the top and bottom edges of lever 14 for a short distance rearwardly of the bifurcated portion 24. The lever 14 is slidable within the flanges 35. The portion of each member 33 extending at right angles rearwardly from the strip 26 is provided with an aperture 36 spaced forwardly of post 4 and another aperture 37 registering with the slot 24.

An angular member 38 is secured to each member 33 by means of a pair of studs 39 and 40 which are riveted to the member 38 and project through apertures 36 and 37, respectively. The portion of each angular member 38 which is positioned adjacent the strip 26 terminates adjacent the block 31 which is in the same plane. When the handle 32 is rotated from its position shown in Figure 3, in which it is parallel to strip 26, the edges of block 31 engage the adjacent edges of angular members 38 and move each member 38 outwardly. This outward movement is limited by studs 41 which are fixed to strip 26 and project into slots 42 provided therefor in each angular member 38.

The studs 39 are each provided with a coiled tension spring 43 which is confined between angular member 33 and a flange 44 positioned adjacent the free end of stud 39. Outward movement of the angular members 38 compresses the spring 43 so that when handle 32 is released the force of the springs 43 will move the angular members 38 inwardly.

The studs 40 are the positioning pins which hold the supporting platform at any vertical level. A vertically extending strip 45 having a plurality of vertically aligned apertures 46 spaced at predetermined intervals is welded to one side of each post 4 with the apertures 46 aligned with stud 40. A shoe 47 fits over the strip 45 and is provided with an aperture 48 through which stud 40 projects and a flange 49 which spaces member 33 from the shoe a distance sufficient to permit the bifurcations 24' to slide between the shoe and the angular member 33.

In the latched position of the stand, as shown in Figure 3, the front ends of angular members 38 abut opposite edges of block 31 and the rearwardly projecting portions of members 38 are juxtaposed against the corresponding portions of angular members 33. At the same time the studs 40 project into one of the apertures 46. Rotation of the handle 32 to the position shown in Figure 5 moves the angular members 38 outwardly, as shown in Figure 4, to disengage the studs 40 from the apertures 46. The studs 40 are not disengaged from apertures 48 in the shoes 47. When the studs 40 are disengaged from the apertures 46 the cross bar 25 may be raised or lowered to move the links 14 about their pivots 15, and thereby raise or lower the supporting platform through the action of links. The spiral springs 18 aid the upward movement of the supporting platform and oppose the lowering movement. As the levers 14 are moved through the arc between the solid and dotted line positions of Figure 2 the distance along the link 14 between the pivot 15 and the post 4 shortens to a minimum where the lever 14 is horizontal, and then increases. The slot 24 is long enough to permit the sliding motion of link 14 required. The cross bar 25 remains a fixed distance in front of the stand so that if the operator is sitting in front of the stand he does not have to move away to permit movement of the cross bar. When the handle 32 is released the springs 43 move the angular members 38 inwardly so that the studs 40 will engage the adjacent aperture 46 to hold the supporting platform from further movement in either direction.

From the foregoing it will be seen that we have devised a stand that may easily be adjusted to a predetermined vertical position and securely held in such position. Although we have described a preferred embodiment of our invention in considerable detail, it will be understood that the description is intended to be illustrative, rather than restrictive, as many details may be modified or changed without departing from the spirit or scope of the invention. Accordingly, we do not desire to be restricted to the exact structure described, except as limited by the appended claims.

We claim:

1. A rectangular adjustable stand comprising a base member having an upstanding angular post at each corner, a top section comprising a load supporting platform and an angular post depending from said platform at each corner thereof, said depending posts telescopically fitting in said upstanding posts, a lever pivotally connected to each post at the rear end of said stand, said levers extending forwardly at opposite edges of said stand, a cross bar extending across the front of said stand and having means connecting each end thereof to the forward end of one of said levers, a transversely movable pin secured adjacent each end of said cross bar, said pins being removably engageable with the upstanding posts at the front corners of said base member, a handle pivotally secured to said cross bar, pivotal movement of said handle moving said pins out of engagement with said front upstanding posts to permit vertical movement of said cross bar relative to said stand, a pair of links each connected at one end to one of said levers and at its other end to said platform whereby vertical movement of said cross bar moves said platform in the same direction, and a spiral spring mounted adjacent each rear upstanding post, said springs being operatively connected to said levers and urging said levers upwardly about their pivots.

2. A rectangular adjustable stand comprising a base member having an upstanding angular post at each corner, a top section comprising a load supporting platform and an angular post depending from said platform at each corner thereof, said depending posts telescopically fitting in said upstanding posts, a lever pivotally connected to each post at the rear end of said stand, said levers extending forwardly at opposite edges of said stand, a cross bar extending across the front of

said stand, an angular extension connecting each end of said cross bar with the forward end of the adjacent lever, a transversely movable pin projecting transversely from each of said angular extensions, said pins being removably engageable with the upstanding front posts of said base member, a handle pivotally mounted on said cross bar and operable to move said pins transversely out of engagement with said front upstanding posts to permit vertical movement of said cross bar relative to said stand, a pair of links each connected at one end to one of said levers and at its other end to said platform whereby vertical movement of said cross bar moves said platform in the same direction, and a spiral spring mounted adjacent each rear upstanding post, said springs being operatively connected to said levers and urging said levers upwardly about their pivots.

3. A rectangular adjustable stand comprising a base member having an upstanding angular post at each corner, a top section comprising a load supporting platform and an angular post depending from said platform at each corner thereof, said depending posts telescopically fitting in said upstanding posts, a lever pivotally connected to each post at the rear end of said stand, said levers extending forwardly at opposite edges of said stand, a cross bar extending across the front of said stand and having means connecting each end thereof to the forward end of one of said levers, a transversely movable pin secured adjacent each end of said cross bar, said pins being removably engageable with the upstanding posts at the front corners of said base member, a handle pivotally secured to said cross bar, pivotal movement of said handle moving said pins out of engagement with said front upstanding posts to permit vertical movement of said cross bar relative to said stand, a pair of links each connected at one end to one of said levers and at its other end to said platform whereby vertical movement of said cross bar moves said platform in the same direction, spring means normally urging said pins into holding engagement with said front upstanding posts to hold said platform against vertical movement, and a spiral spring mounted adjacent each rear upstanding post, said springs being operatively connected to said levers and urging said levers upwardly about their pivots.

4. A rectangular adjustable stand comprising a base member having an upstanding angular post at each corner, a top section comprising a load supporting platform and an angular post depending from said platform at each corner thereof, said depending posts telescopically fitting in said upstanding posts, a lever pivotally connected to each post at the rear end of said stand, said levers extending forwardly at opposite edges of said stand, the forward end of each lever being slotted, a cross bar extending across the front of said stand, an angular extension connecting each end of said cross bar with the slotted end of the adjacent lever, said levers being slidable relative to said angular extensions, a transversely movable pin projecting from each of said angular extensions and passing through the slot of the adjacent lever to engage the front upstanding posts of said

base member, a handle pivotally mounted on said cross bar, said handle being operable to move said pins transversely out of engagement with said front upstanding posts to permit vertical movement of said cross bar relative to said stand, a pair of links each connected at one end to one of said levers and at its other end to said platform whereby vertical movement of said cross bar moves said platform in the same direction, spring means normally urging said pins into holding engagement with said front upstanding posts to hold said platform against vertical movement, and a spiral spring mounted adjacent each rear upstanding post, said springs being operatively connected to said levers and urging said levers upwardly about their pivots.

5. A rectangular adjustable stand comprising a base member having an upstanding angular post at each corner, a top section comprising a load supporting platform and an angular post depending from said platform at each corner thereof, said depending posts telescopically fitting in said upstanding posts, a lever pivotally connected to each post at the rear end of said stand, said levers extending forwardly at opposite edges of said stand, a cross bar extending across the front of said stand, an angular extension connecting each end of said cross bar with the forward end of the adjacent lever, said levers being slidable relative to said angular extensions, a plurality of vertically aligned apertures extending along one side of each of said upstanding front posts, a shoe slidably mounted on each of said upstanding front posts, said shoes each having an aperture aligned with said vertically aligned apertures, a transversely movable pin projecting transversely from each of said angular extensions, said pins extending through said aperture in the adjacent shoe to engage said vertically aligned apertures upon horizontal alignment therewith, a handle pivotally mounted on said cross bar, said handle being operable to move said pins transversely out of engagement with said vertically aligned apertures to permit vertical movement of said cross bar relative to said stand, a pair of links each connected at one end to one of said levers and at its other end to said platform whereby vertical movement of said cross bar moves said platform in the same direction, and a spiral spring mounted adjacent each rear upstanding post, said springs being operatively connected to said levers and urging said levers upwardly about their pivots.

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